

The *CoastSmart* Communities Initiative



Photo by Liz Roll/
FEMA News Photo

CoastSmart Communities Initiative

- Develops and provides technical tools and skill-building opportunities to local communities to help incorporate coastal hazards into local policies and programs
 - CoastSmart Communities Scorecard
 - CoastSmart Online Resource Center
 - Maryland's Coastal Atlas
 - Informational factsheets
 - CoastSmart Trainings
- Provides financial support to local communities to help offset the cost of incorporating coastal hazards into planning efforts
 - CoastSmart Communities Competitive Grant Program



CoastSmart Communities Scorecard

- **Intended to help local governments determine how well they are currently positioned to plan for coastal hazard impacts through a simple, practical self-assessment**
 - Allows a community to determine what they are doing right and can help identify areas that need more work
 - Provides a mechanism for local officials to identify specific, realistic ways that they can prepare for coastal hazards by integrating them into existing planning, management, and regulatory programs

The CoastSmart Communities Scorecard



A Community Self-Assessment Tool

This tool has been prepared by the Chesapeake & Coastal Program to provide Maryland's coastal communities a practical method to assess their preparedness to face the risks associated with coastal hazards and the potential increased impacts of those hazards in the future due to climate change



Each Section's Structure

- Overview
- “Where to Start” box
- Yes or No Questions
- Possible Ratings
 - *CoastSmart*
 - On the Right Track
 - Getting Started
- Recommendations and Resources
 - Ideas for how to incorporate coastal hazards into future planning efforts
 - Information and links to state and federal resources

Natural Resources

Maryland's natural resources provide protection and buffering from the impacts of coastal hazards in the form of natural drainage ways, floodplains, wetlands, beaches, and dunes. In the past, development has altered or destroyed many of these natural protective features and significantly reduced the ability of the land to absorb coastal hazard impacts. Furthermore, as sea level rises, critical ecosystems and habitats, such as wetlands, may migrate into upland areas and potentially affect current or proposed development.

Where to Start
Consult the following resources, if available, to help complete this section:

- Comprehensive Plan (Sensitive Areas element)
- Local Critical Area Program

Natural Resources	Yes	No
1. Are potential conservation land acquisitions or easements assessed for their vulnerability to coastal hazards and climate change?	<input type="checkbox"/>	<input type="checkbox"/>
2. Are potential conservation land acquisitions or easements assessed for their natural protective properties, such as storm surge buffer, flood water management, and erosion control?	<input type="checkbox"/>	<input type="checkbox"/>
3. Are potential conservation land acquisitions or easements assessed for their ability to provide long-term suitable habitat?	<input type="checkbox"/>	<input type="checkbox"/>
4. Do conservation land acquisition or easement programs within your community direct funding to areas designated as the most ecologically valuable land, such as those identified in Maryland GreenPrint?	<input type="checkbox"/>	<input type="checkbox"/>
4.1 Has any assessment been conducted to determine the future extent of these ecologically valuable areas within the community, such as the Sea Level Affecting Marshes Model (SLAMM)?	<input type="checkbox"/>	<input type="checkbox"/>
5. Does the County Land Preservation, Parks, and Recreation Plan:	<input type="checkbox"/>	<input type="checkbox"/>
5.1 Address open space conservation as a way to minimize the effect of coastal hazards?	<input type="checkbox"/>	<input type="checkbox"/>
5.2 Get updated in coordination with the comprehensive plan or on a regular schedule?	<input type="checkbox"/>	<input type="checkbox"/>
6. Is public open space maintained in a manner that provides protection from coastal hazards?	<input type="checkbox"/>	<input type="checkbox"/>
7. Does the community comprehensive plan designate areas requiring special protection (such as wetlands, beaches and floodplains)?	<input type="checkbox"/>	<input type="checkbox"/>
8. Does the sensitive areas element of the comprehensive plan include coastal hazards and climate change or does the comprehensive plan have a sea-level rise planning element that addresses potential changes in sensitive areas?	<input type="checkbox"/>	<input type="checkbox"/>
9. Does the community consider the following threats in their Critical Area, Sensitive Area or open space planning processes:		
• Coastal storms on shorelines	<input type="checkbox"/>	<input type="checkbox"/>
• Erosion on shorelines	<input type="checkbox"/>	<input type="checkbox"/>
• Sea-level rise on shorelines and wetlands	<input type="checkbox"/>	<input type="checkbox"/>
• Coastal hazards on wildlife and habitat	<input type="checkbox"/>	<input type="checkbox"/>
10. Does the community have a local ordinance to protect the following from development or disturbance:		
• Dunes	<input type="checkbox"/>	<input type="checkbox"/>
• Bluffs	<input type="checkbox"/>	<input type="checkbox"/>
• Eroding Cliffs	<input type="checkbox"/>	<input type="checkbox"/>
• Wetlands	<input type="checkbox"/>	<input type="checkbox"/>
• Beaches	<input type="checkbox"/>	<input type="checkbox"/>
11. Does the Water Resources Element in the comprehensive plan consider the impacts of coastal hazards (e.g., salt water intrusion) on the availability of freshwater for drinking water and living resources?	<input type="checkbox"/>	<input type="checkbox"/>
12. Does the community have protective measures in place for aquifer recharge areas, including wells, springs, seeps, lakes and headwaters?	<input type="checkbox"/>	<input type="checkbox"/>
Total Number of Yes or No Answers		

2/3/2012 DRAFT – FOR COMMENT ONLY Scorecard 15

Recommendations & Resources

Natural buffers may provide the best and most resilient solutions to rising sea levels and coastal hazards. Leaving natural systems in place and allowing them the opportunity to migrate, when possible, will offer much better results than attempting to recreate or restore them after a disturbance or in another location. To better plan for how natural resources will transform and be allowed to adapt to climate change, consider the following actions:

- Adopt policies and land development regulations designed to protect natural features such as dunes, bluffs, wetlands, beaches, etc.
- Identify opportunities to restore, enhance, or supplement natural protective features
- Adopt land use regulations that require expanded setbacks to protect buffer areas around the margins of natural protective features, such as extending the Critical Area buffers around waterways and wetlands beyond the 100-foot minimum
- Utilize acquisitions and easements to protect the integrity of natural protective features and support open space conservation to reduce the vulnerability of adjacent infrastructure
- Identify areas with a high conservation potential and strategically direct protection and restoration activities and funding towards them
- Prioritize and target protection and restoration activities that enhance the ability of coastal ecosystems to provide natural buffers, flood control, storm surge protection, and reduce the vulnerability of coastal communities

Other Helpful Resources

Maryland GreenPrint
Developed by the State of Maryland, GreenPrint is a web-based tool showing the relative ecological importance of every parcel of land in the State. This map, updated periodically with new information, shows areas already protected in the state and areas in which Maryland will focus future conservation efforts. These new areas, called Targeted Ecological Areas (TEA's), include large blocks of forests and wetlands, rare species habitats, aquatic biodiversity hotspots and areas important for protecting water quality. They are identified by DNR as the most ecologically valuable areas in the State and are preferred for conservation funding through Stateside Program Open Space. Soon, GreenPrint will begin to include coastal blue infrastructure priorities and areas important for wetland sea level rise adaptation to help inform management decisions. To find out more about the GreenPrint Map and to view its data, visit <http://www.greenprint.maryland.gov/>

Synthesis of Adaptation Options for Coastal Areas
The Climate Ready Estuaries Program within the EPA has developed this document to provide a brief introduction to key physical impacts of climate change on estuaries and a review of on-the-ground adaptation options available to coastal managers to reduce their systems' vulnerability to climate change impacts. The majority of management goals discussed in this report pertain to the maintenance and restoration of natural systems and each section provides specific examples of measures undertaken by states or localities. http://www.epa.gov/crre/downloads/CRRE_Synthesis_1.09.pdf

Restoring natural buffers and allowing them to migrate into upland areas will provide valuable ecosystem services such as filtering runoff and providing habitat for a number of species. In addition, they will also reduce the impact of many coastal hazards on the land behind them.

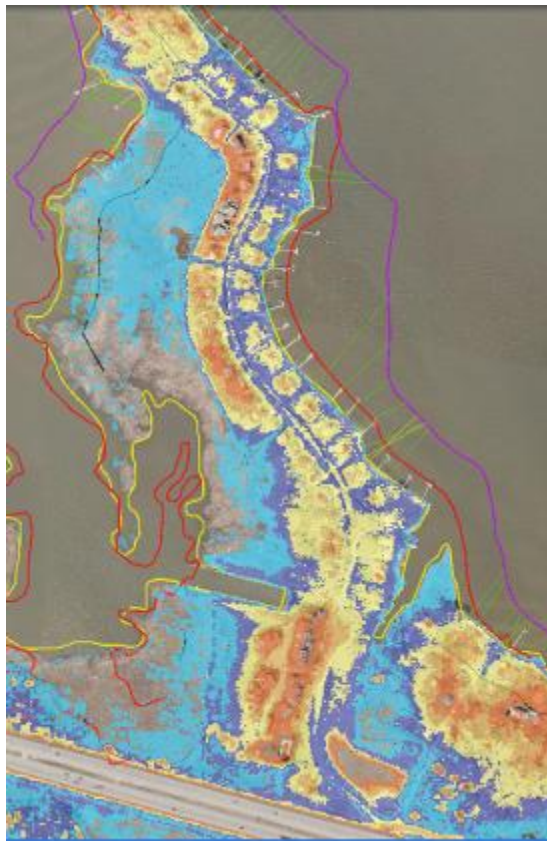
Scorecard 16

DRAFT – FOR COMMENT ONLY

2/3/2012

Coastal Atlas Applications

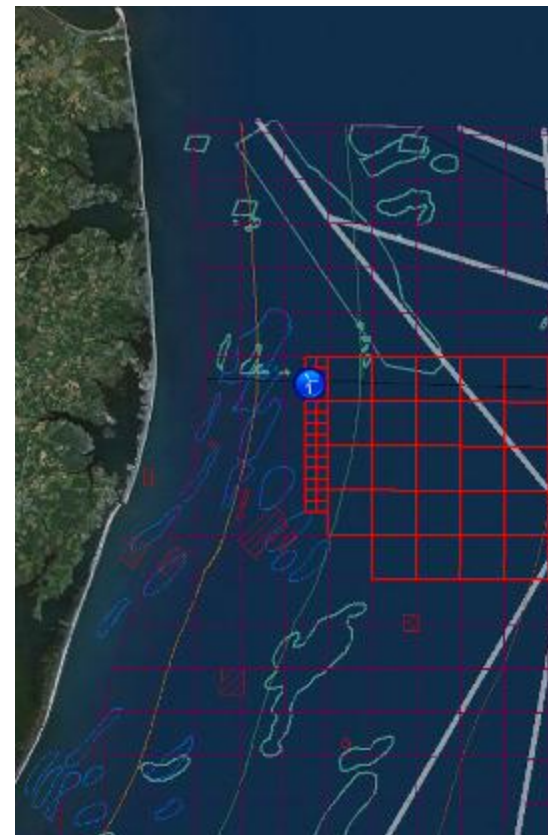
Shorelines



Estuaries



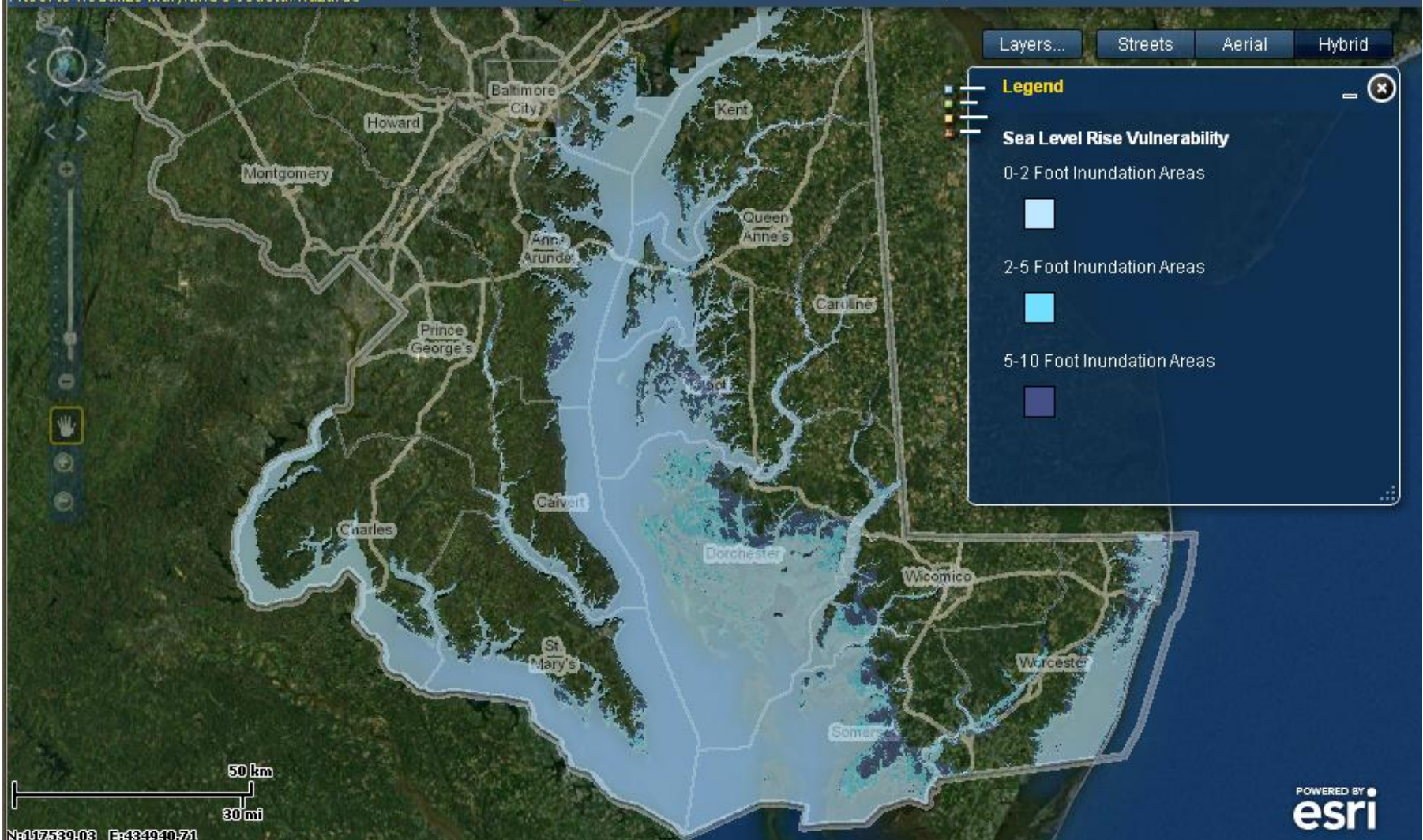
Oceans



Maryland's Coastal Atlas

COASTAL ATLAS: Shorelines

A tool to visualize Maryland's coastal hazards



CoastSmart Factsheets

CoastSmart Communities

Maryland's Chesapeake & Coastal Program

Climate change is already impacting Maryland. Maryland's low-lying coastal communities, public infrastructure, and vital habitats are particularly vulnerable to the impacts to climate change, especially with respect to accelerated sea level rise, shoreline erosion and increased storm frequency and/or intensity. With the adoption of the Climate Action Plan in 2008, the State committed to provide sea level rise planning guidance to advise adaptation and response planning at the local level.

"With over 4,000 miles of coastline, we cannot wait to tackle this threat," said Maryland Governor Martin O'Malley. "Here in Maryland we are aggressively implementing measures to reduce greenhouse gas emissions that will provide benefits long into the future; however, we must also ensure our communities are 'CoastSmart' now—ready, adaptive and resilient."

Governor Martin O'Malley

CoastSmart Communities Initiative Through Maryland's CoastSmart Communities Initiative, the Chesapeake & Coastal Program is helping local communities identify and implement strategies to protect life and property vulnerable to coastal hazards and climate change. From hands-on training and planning tools to financial resources, the Chesapeake & Coastal Program is ensuring that local communities have the tools that they need to identify and take the necessary actions to become ready, adaptive and resilient to the impacts of climate change.

Grants to Local Communities In partnership with the National Ocean and Atmospheric Administration (NOAA), the Chesapeake & Coastal Program provides financial assistance to local communities for coastal hazards and sea-level rise response planning. Funding has been used to assist local communities invest in computer models, implement land use plans and establish development codes and ordinances.

The Chesapeake & Coastal Program is working with the coastal towns of Grinstead and Queenstown, the City of Annapolis, as well as Worcester, Dorchester, Somerset, Caroline and Anne Arundel Counties to put measures in place to protect homes, business and livelihoods from hurricanes, coastal storms and impending sea level rise.

What is Freeboard?

Raise Your Home, Lower Your Payments



What is Freeboard?

Freeboard is elevating a building's lowest floor above predicted flood elevations by a small additional height (generally 1-3 feet above National Flood Insurance Program (NFIP) minimum height requirements). Elevating a home a few feet above legally mandated heights has very little effect on its overall risk, yet it can lead to substantial reductions in flood insurance, significantly decreasing the chance the home will be damaged by storm and flooding, and help protect its equity in the event of sea level rise.

What are the Benefits of Freeboard?

Increased protection from floods and storms. Storm waves can and do rise higher than shown on flood insurance rate maps (FIRMs). Freeboard helps protect buildings from

storms larger than those that FIRMs are based on, and provides an added margin of safety to address the flood modeling and mapping uncertainties associated with FIRMs. Better preparation for ongoing sea level rise. Historically, Maryland has experienced a relative sea level rise of approximately 1 foot over the past 100 years. In the future, however, due to the combined forces of regional land subsidence and global climate change, Maryland may experience 3-4 feet of sea level rise over the next century. Since elevations on FIRMs do not include sea level rise, freeboard will help keep structures above floodwaters as storm surge elevations increase. For this reason, the Maryland Coastal Storms and Climate Change recommends 2 or more feet of freeboard for structures located in highly influenced floodplains.

Example of savings on NFIP with freeboard

Zone V*	1 Freeboard	2 Freeboard	3 Freeboard	4 Freeboard	5 Freeboard
Annual premium	\$1,200.00	\$1,000.00	\$800.00	\$600.00	\$400.00
Annual savings	\$0.00	\$200.00	\$400.00	\$600.00	\$800.00

*NFIP premiums based on October 1996 rates for a 100-year residential structure with 100% replacement cost value and located in the Chesapeake Bay. Premiums differ from zone to zone. Call 1-800-424-6282 for more information on NFIP rates and coverage.

†Zone V is the Flood Insurance Rate Map (FIRM) designation for coastal areas that are subject to flooding from a 100-year storm surge. Other zones are subject to flooding from a 100-year storm surge, but are not subject to flooding from a 100-year storm surge.

‡Zone A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

CoastSmart Recovery

Maryland's Chesapeake & Coastal Program

Severe weather, such as hurricanes and nor'easters, can cause coastal flooding and result in extensive damage to properties. Unfortunately, this is a hard reality of living in the coastal zone and sometimes it cannot be avoided. However, there are certain things that can be done before and after a storm to improve your property's long-term resilience to future storms. Incorporating certain features in your building design, along with thoughtful management of value, along with certain items on your property, can significantly reduce your vulnerability to flooding and storm surge and in the long run reduce the cost of maintaining your property.

Why should I include flood-resistant building techniques when rebuilding?

There are many reasons why you should consider flood-resistant building techniques when rebuilding your property. Flood-resistant building techniques can help you protect your property from future flooding and storm surge. Flood-resistant building techniques can also help you reduce the cost of maintaining your property. Flood-resistant building techniques can also help you increase the value of your property. Flood-resistant building techniques can also help you protect your property from future flooding and storm surge.

What Can I Do?



- 1. Siting** - Site buildings away from flooding-prone areas and flood-prone areas.
- 2. Building Form** - Design buildings to have a stable and unobstructed path to reduce the possibility of wind-related damage.
- 3. Lowest Floor Elevation** - Elevate the bottom of the lowest functional structure supporting the lowest floor above the 100-year floodplain. Add additional "freeboard" to reduce damage and lower flood.
- 4. Flood-Resistant Building** - Use an open foundation. Do not obstruct the area below the elevated portion of the building. Flood or maintain the use of building materials.
- 5. Flood-Resistant Building** - Use an open foundation. Do not obstruct the area below the elevated portion of the building. Flood or maintain the use of building materials.
- 6. Flood-Resistant Building** - Use an open foundation. Do not obstruct the area below the elevated portion of the building. Flood or maintain the use of building materials.

Maryland's Coastal Atlas

Maryland's Chesapeake & Coastal Program

The Coastal Atlas is an online mapping and planning tool that allows state and local decision-makers to visually analyze and explore data for coastal and ocean planning activities.

Maryland's Blue Infrastructure

Our ocean and estuarine ecosystems today face an area of unprecedented activity. Wind farms and other energy facilities, commercial fishing, diverse recreational uses, and shipping highways are all competing for use and space. To ensure the protection of Maryland's critical ocean and estuarine resources, our Blue Infrastructure, and the coastal economies that depend on them, the Coastal Atlas has been developed to provide direct access to available data needed for coastal and ocean planning efforts. From finding the best location for renewable energy projects to locating sand resources needed for beach replenishment to providing direct access to available data needed for coastal and ocean planning efforts, the Coastal Atlas will assist users in identifying potential conflicts so that they can be avoided early in the planning process.

Better Decision-Making

The Coastal Atlas is the result of a collaborative effort among the Maryland Department of Natural Resources, the Maryland Energy Administration, Towson University, the University of Maryland, The Nature Conservancy and the National Oceanic and Atmospheric Administration. The data available through the Coastal Atlas includes physical characteristics, human uses and ecological resources. Through the Coastal Atlas, users will be able to visualize, query, map, and analyze available data to better manage our marine and estuarine resources.

The tools currently available, and those that will be continually developed for the Coastal Atlas, are designed to support better decision-making by transferring available data into information tailored for specific users.

CoastSmart Trainings

Step 1

What is at risk?

Begin to understand what coastal flooding, storm surge and sea-level rise could mean in your area

- Learn about the impacts of coastal hazards and how they might change
- Identify how coastal land use planning relates to coastal storm events and hazard reduction
- Begin to understand how coastal hazards could affect your community

Step 2

What can you do?

Begin to assess your community's vulnerabilities and identify existing capacities that could be used to address potential issues

- Understand how similar issues are being addressed
- Investigate how the CoastSmart Scorecard and a Vulnerability Assessment could be used as planning tools

Step 3


CoastSmart Scorecard

Conduct a Scorecard Assessment to identify what planning capacities are in place and identify what could be developed further

Inundation Mapping

Learn how to conduct a vulnerability assessment for your community to help identify at-risk populations, infrastructure and resources

CoastSmart Communities Initiative Grant Program



REQUEST FOR PROPOSALS

CoastSmart Communities Initiative (CCI) Grant

GRANT SUMMARY

The CoastSmart Communities Initiative (CCI) competitive grant program will provide financial and technical assistance to local governments to promote the incorporation of natural resource and/or coastal management issues into local planning and permitting activities. CCI will target coastal communities that want to reduce their vulnerability to the effects of coastal hazards and become more resilient to coastal hazards. CCI seeks proposals for projects that are aligned with the strategic objectives of Maryland's Chesapeake & Coastal Program and foster innovative coastal management through local initiatives that:

- Ensure that coastal communities are protected from coastal hazards and the impacts of climate change (e.g., CoastSmart Communities);
- Monitor and ensure coastal and ocean systems meet living resource and human needs;
- Serve to enhance the protection and management of Maryland's coastal resources.

WHO: Municipalities and counties in the coastal zone are eligible to apply for and receive funds. Maryland's coastal zone includes the following counties and the municipalities located within: Worcester, Somerset, Wicomico, Dorchester, Talbot, Kent, Queen Anne's, Cecil, Harford, Baltimore, Baltimore City, Annapolis, Prince Georges, Calvert, Charles and St. Mary's.

WHAT: Funding will be provided on an annual basis; however successful partnerships may receive continued support for up to three years in order to achieve the project outcomes and result in a program of ongoing project proposals should target:

- Reducing the vulnerability of the built environment to the effects of sea level rise and/or climate change through the modification of ordinances, codes, plans, and programs;
- Modifying ordinances, codes, plans, and programs to address nonpoint source pollution impacts;
- Developing and implementing mechanisms to preserve and restore natural or cultural resources;
- Increasing the long-term resilience of a community by identifying the potential risk from and preparing for coastal hazards, such as storm surge, shoreline erosion, and coastal flooding, through the modification of ordinances, codes, plans and programs.

WHEN: Application Deadline: 5:00pm on Thursday, **March 15, 2012**

AMOUNT: Expected grant awards of up to \$75,000 annually per year.




WHERE: Proposals should be submitted online through the Chesapeake & Coastal Program's web-based grants management service, CCP GRANTS ONLINE at: <http://ccpgrants.dnr.state.md.us>

CONTACT: Jeff Allenby
Maryland Department of Natural Resources Chesapeake and Coastal Service
(p) 410.760.8745 • (t) 1.800.872.9799 (e) jeff.allenby@dnr.state.md.us

Go to <http://dnr.maryland.gov/ccp/grants.asp> to submit a proposal

Balancing human demands with conservation of the resources that make Maryland still a unique place to live, work and play

Maria O'Malley, Governor
John R. Griffin, Secretary

- Provides financial and technical support to municipal and county governments to incorporate coastal hazard and climate change resiliency into local planning and policies
- Often allows a community to address required planning activities while incorporating coastal hazard considerations
- Can help increase the resilience of a community and reduce the long-term exposure to coastal hazard risks



Jeff Allenby
jallenby@dnr.state.md.us
(410) 260-8743

<http://www.dnr.state.md.us/CoastSmart>

